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Dental utilization by children in Hispanic agricultural worker families in California

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Abstract

Background—Agricultural worker families encounter multiple barriers to accessing all needed dental care. This study investigated predisposing, enabling, and need factors associated with children's past year dental utilization among Hispanic agricultural worker families in central California.

Methods—Oral health survey and clinical data were collected from families participating in a larger, population-based study in 2006-7. Generalized estimating equation logit regression assessed effects on a dental visit among children aged 0-17 (n=405). Analyses adjusted for clustering of children in the same household. Predisposing (sociodemographics), enabling (child's dental insurance, usual source of dental care, caregiver past year dental visit, acculturation level, income and education), and need (caregiver's oral health rating, perception of cavities, and clinically-determined treatment urgency) factors were examined.

Results—Half (51%) the children had a past year dental visit, while 23% had never been to a dentist. In the final model, children were less likely to have a past year dental visit if they were foreign-born, male, had caregivers that thought they had cavities or were unsure, and if the dentist recommended treatment ‘at earliest convenience’. Children aged 6-12, with a regular dental care source, and whose caregivers had a recent dentist visit were more likely to have a past year dental visit.

Conclusions—Children were more likely to have a past year dental visit if they had a usual source of dental care (OR =4.78, CI=2.51-9.08), and if the caregiver had a past year dental visit

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(OR=1.88, CI=1.04-3.38). Emphasis should be placed on these two modifiable factors to increase children's dental utilization.

Keywords

Cross-Sectional Studies/utilization; Dental Health Surveys/utilization; Hispanic Americans

The poor oral health status of children in agricultural worker families has been well documented (1-7), but less is known about their dental service utilization patterns. Arcury and Quandt (8) recently evaluated the healthcare delivery system available to these families, and called for more research on dental utilization. Agricultural worker families encounter many of the same major barriers to care as other lower socioeconomic status groups in the U.S.: issues with cost, insurance, transportation, available providers and clinic hours, as well as time off to seek care (8-12).

Oral health is the most common unmet health need in all U.S. children (13) and it is frequently an unmet need among agricultural workers of all ages (9, 11, 14-16). Access to regular, timely dental care is one important determinant of oral health. Children's caregivers play a major role in deciding to seek care and bringing their children to the dentist. Benefits to regular dental care access from an early age include early identification and treatment of dental problems before they become severe and costly to treat. Longitudinal studies report that young children with early childhood caries (ECC) are at a higher risk for dental problems and disease in their permanent teeth (17-19). Regular dental visits in childhood support utilization into adulthood, and provide opportunities for preventive interventions, age-appropriate education for the child and child's caregiver, and instruction on proper hygiene technique.

Although some studies suggest that children in agricultural worker families may receive more preventive dental sealants than the general population (1), and more dental care on a regular basis than their parents (5), most research indicates that access is still problematic for many of these children. Mexican-American children of migrant workers from low-income families were found to visit the dentist less frequently than higher income children and their counterparts in the Hispanic Health and Nutrition Examination Survey (HHANES) (6). Among children in migrant families in North Carolina, 79% had never been to a dentist (20).

Dental coverage for children is a mandated Medicaid and State Children's Health Insurance Programs (CHIP) benefit. However, in many states, few dentists participate in Medicaid or other public programs due to the low reimbursements and other factors (21). General dentists may not be comfortable or willing to see younger children, despite American Academy of Pediatric Dentistry (AAPD) guidelines recommending first dental visits by age one (22). Pediatric dentists also have a low participation rate in Medicaid in California (23).

The purpose of the present analysis is to examine correlates of dental visits among a sample of children from agricultural-worker families in central California using the Behavioral Model of Health Services Utilization (24-26). This model asserts that care-seeking behavior is a function of predisposing, enabling, and need (PEN) factors, and has been applied in

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other research using caregiver-reported information to examine children's dental visit patterns (20, 27).

Predisposing factors include individual demographic characteristics such as age. Enabling factors include whether or not a child has dental insurance or regular dental provider, and other family resources like income. The need component includes both perceived and evaluated health status. Perceived need is frequently a strong correlate in the decision to seek care. A caregiver's perception of her/his child's dental status and need is important to assess. Some studies support that caregivers' assessments of preschool-aged children's oral health is associated with disease level, need for care, and care-seeking (28-30). However, some research with older child-parent pairs suggests that there may be differences in perceived oral health status between parents and adolescents (31).

METHODS

Sample

Data are from the Immigration to California: Agricultural Safety and Acculturation (MICASA) study of agricultural families led by the University of California (UC) Davis (32). The UC San Francisco Center to Address Disparities in Children's Oral Health (also called CAN DO) led the dental component of MICASA and provided the dental exam and survey data analyzed in the present study. The UC San Francisco Institutional Review Board approved the dental component of MICASA. The participating families were from Mendota, California, a rural community in central San Joaquin Valley in Fresno County. The overall research design and household enumeration process have been described in depth elsewhere (32). In brief, adults between 18-55 years old, who self-identified as Hispanic, engaged in farmwork in the U.S. for at least 45 days in the prior year, and a Mendota resident at the time of the interview were eligible for MICASA.

From the 445 MICASA households, families were eligible for the dental study if there was at least one child under age 18. A random, community-based sample of 335 farmworker families in Mendota was selected as the final MICASA study cohort. Data were collected on 213 families (representing 64% of the 335 eligible). These families were invited to participate in the dental component. Local bilingual interviewers contacted the family, and obtained additional informed consent for the dental component. A Community Advisory Board provided input into study activities.

Data collection

One dentist completed all exams for this study in the field office with portable dental equipment. The experienced dentist received training and followed universal infection control guidelines and National Health and Nutrition Examination Survey (NHANES) criteria (33). Intra-examiner reliability was excellent. Cluster adjusted kappas were calculated using a Generalized Estimating Equation (GEE) model with polytomous link function (34) for the twenty children in the study who had repeat dental caries exams one to two months after the original exam. The GEE clustered kappa=0.93 (95% (confidence interval) CI: 0.86-1.00). All clinical data were entered onto a secure computer by an

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assistant. Most interviews were conducted in participants' homes, or sometimes the field office as requested, by trained bilingual interviewers from the local area. Data were collected in 2006-7. Adults were interviewed face-to-face about themselves and each child or adolescent in the family living at home. Nearly all (98%) interviews about the child were completed by the mother; in 6 cases it was the father, and in 3 cases it was another relative who was a main caregiver. Each study participant in a family received toothbrushes and a $15 gift certificate as compensation for their time.

Measures

Caregiver report of whether or not the child had a dental visit in the past year was the main outcome. Dental utilization information was dichotomized as a past year dental visit or not since this is the American Academy of Pediatric Dentistry (AAPD) guideline (35) and Healthy People 2020 objective OH-7 and Leading Health Indicator (36).

Some additional descriptive information about children's dental utilization was collected for subsets of the sample based on visit history, so were not included in the PEN Models. Among children that had been to a dentist, a caregiver reported the child's age at his/her first dental visit. Among children that had not been to a dentist in the last year, the inability to obtain needed care and open-ended responses about barriers to care for children were also summarized.

The PEN Model guided the inclusion of independent variables. *Predisposing factors* included the child's socio-demographic characteristics: age groups (0-5, 6-12, 13-17), sex (female or male), and birth country (U.S. born or not). Additional predisposing information included the number of days the caregiver worked in farming in the last year (continuous).

Enabling factors included the child's dental insurance status (recoded as none, Medicaid, or other, which mostly encompassed those with Children's Health Insurance Program coverage, private insurance, or something else), whether or not the child had a usual source of dental care (USC), and if the child participated in the free/reduced cost lunch program. Caregiver level enabling factors included whether or not the caregiver had a past year dental visit, the caregiver's highest grade level of education completed (continuous), annual household income (recoded as <$10,000, $10,000-$20,000, or >$20,001), household size (numeric), and caregiver's Anglo/Mexican acculturation level as assessed by the Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)(37) (numeric). The validated 12-item ARSMA-II asks about individuals' preference for thinking, reading, writing, speaking, and watching television in Spanish and English on a 5-point Likert scale. Mean scores for the six Spanish-preference items were calculated and subtracted from the mean score of the six English-preference items to create an overall score (−5 to +5). Scores less than zero indicate stronger Mexican orientation.

Need factors included a dental examiner's clinical assessment of treatment urgency and two caregiver-assessment measures of the child's current dental need. Treatment urgency was rated by the dentist using the NHANES assessment and categorized each child's need to see a dentist for care into one of the following timeframes: 1) immediately, 2) within the next 2 weeks, 3) at their earliest convenience, or 4) to continue regular care (33). The dentist

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categorized children with caries as needing to see a dentist within two weeks, and those that had not had a visit in a year but did not have obvious decay to go at their earliest convenience to get a full exam and radiographs. Very few children needed immediate attention, so they were grouped with those needing treatment in the next two weeks and both were classified as ‘urgent’. The two other child need factors were based on caregiver perceptions. Caregivers were asked “do you think your child has any cavities now that may need treatment?”, and possible responses were yes, no, or don't know. Caregivers also subjectively rated the child's oral health status from poor to excellent, which was recoded as fair/poor versus good/very good/excellent.

Data Analysis

The final sample (n=405) included all children aged 0-17 who had at least one tooth for a dental exam and survey data. Overall, included measures had very few missing items; the free/reduced cost lunch program variable had the most missing at 7%. To use all available data, maintain the maximum sample size, and reduce possible non-response bias, the few missing items were imputed using the SAS-callable IVEware (38) multiple imputation procedure with 5 replicate datasets using variables from all the analytic models before scales were constructed or any analyses were conducted. IVEware was used to correctly aggregate results across multiple imputations. The distributions of all variables were explored. Descriptive statistics and bivariable associations between each variable of interest and the dependent variable were analyzed.

Generalized estimating equation (GEE) logit regression analyses assessed the associations of predisposing, enabling, and need factors on the likelihood of a child's past year dental visit, using SAS version 9.1 PROC GENMOD to account for clustering of children within households (39). Model 1 included only predisposing factors, Model 2 included predisposing and enabling factors, and Model 3 included predisposing, enabling and need factors together. No multicollinearity issues were found in the models. Mediation between models and associations between predisposing, enabling, and need variables were also explored. Utilization was not found to be mediated by need factors, thus all predisposing, enabling and need factors were included in the final model.

RESULTS

Table 1 summarizes the characteristics of the study sample overall and by past year dental visit. Children's mean age was 9 years (range 0-17), and half were male. A quarter of the children were not born in the U.S. Most non-U.S. born children were born in Mexico (87%), and 13% were born in El Salvador (not shown). Only 14% had no dental insurance, and although 71% had Medicaid, just over half (53%) had a reported regular source of dental care. The majority (77%) of children participated in the free/reduced price lunch program.

Caregivers worked in agriculture for a mean of 111 days in the prior year. Just over one third (38%) of caregivers had a past year dental visit. Caregivers reported an average of about six years of education, but there was a wide range (0-22 years). Most families were low-income, with almost one-third reporting earning annual incomes below $10,000

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supporting an average household of six individuals. The ARSMA-II acculturation scale scores indicated caregivers' high orientation to Mexican rather than Anglo culture.

Children's clinically determined treatment need assessment indicated that 33% needed urgent care, 37% should see a dentist at their earliest convenience, while only 30% should continue their routine care. Caregivers believed 37% had cavities and 31% were unsure whether or not the child had cavities, and one quarter of the children were rated as having fair/poor oral health status. Additionally, there were several significant differences between the groups of children with and without a past year dental visit across many factors. Children with a past year dental visit were more likely to be: older, US-born, have dental insurance, have a regular dental care source, participate in the free/reduced price lunch program, and need routine care. There were differences by caregiver factors as well, and children with past year dental visits were more likely to have caregivers with a recent dental visit, higher education level, more US-oriented acculturation level, and not think the child has cavities.

Half the children had a past year dental visit. Figure 1 displays the time since last dental visit. Almost a quarter (23%) had never been to a dentist. Sixty percent of children that have never been to a dentist were age 5 or under. Although most professional provider organizations recommend the first dental visit by age one, many have not sought care, and generally, a higher proportion of younger children had never had dental care. While not included in the PEN model analyses, additional information was collected in the surveys about dental utilization in this group of children. Among the 312 children that had ever been to the dentist, almost 8% went for their first dental visit at age 1, 14% at age 2, 23% at age 3, 19% at age 4, 14% at age 5, 16% age 6-8, and 5% at age 9 or older. Among the 200 children who never had a dental visit or had not been in more than a year, 97 caregivers supplied reasons why they had not taken their child for dental care recently. The most frequent (31%) reason for not going was that the child was too young, followed by cost (16%), did not think about it (14%), no insurance (12%), no dental problem (9%), no time or no appointment (6%), fear or not wanting to take the child (6%), or other reasons (1%). Additionally, 16% of caregivers reported that there was a time in the last year that the child needed care but did not get it, suggesting there are unmet needs. Notably, about half this group includes children that did have a past year dental visit, suggesting underutilization among those that were able to seek care.

The GEE logit regression PEN Model findings are presented in Table 2. Model 3 (full model) includes all predisposing, enabling and need variables together simultaneously. No evidence of mediation was found. Nearly all significant findings from Models 1 and 2 persisted in Model 3, and enabling and need variables appear to explain some of the predisposing variables since there is some change in estimates for age, male, and non-US born. In Model 3, child's age, sex, and country of birth were significant predisposing factors, a USC and caregiver's past year dental visit were significant enabling factors, and perceptions about whether or not the child had cavities and needing treatment at earliest convenience were significant need factors. Children were *less* likely to have a past year dental visit if the child was male (Odds Ratio (OR)=0.55, 95% Confidence Interval (CI)=0.34-0.89, p=0.015), foreign-born (OR=0.21, CI=0.09-0.45, p<0.001), if caregiver

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thought child had cavities (OR=0.31, CI=0.16-0.61, p=0.001) or was unsure if child had cavities (OR=0.40, CI=0.20-0.79, p=0.008), and if child should see a dentist 'at earliest convenience' (OR=0.43, CI=0.23-0.80, p=0.008). Visits were about 2.5 times as likely if children were ages 6-12 years (OR=2.45, CI=1.37-4.37, p=0.002, relative to children 5 and under. Past year dental visits were also *more* likely if children had a USC (OR=4.78, CI=2.51-9.07, p<0.001), and if their caregivers had a past year dental visit (OR=1.87, CI 1.03-3.38, p=0.038). Whether or not children had a USC (a child-level enabling factor) had the largest impact on past year dental utilization.

DISCUSSION

A usual source of dental care was the strongest positive correlate of past year dental utilization among children in these agricultural families that should be encouraged and supported. This finding underscores the importance of obtaining a dental home for every child, an identified regular clinic or provider that can attend to all aspects of oral health for an individual (35, 40). The AAPD adapted the ideal dental home characteristics from the American Academy of Pediatrics (AAP) medical home, to include comprehensive, continuously accessible, coordinated, compassionate, culturally- effective, family-centered oral health care provided by a licensed dentist (22, 41). A dental home can have substantial clinical and financial implications for improving children's oral health; some evidence suggests that for higher risk young children, early preventive dental visits are associated with lower treatment costs and more preventive oriented utilization patterns later (42). However, for families that do not already have a dental home for their child, overcoming the many access to care barriers to establish one may only happen if financial and other major barriers begin to be addressed at the policy level.

A dental home is correlated with having a recent dental visit. However, not all children with a recent visit have a dental home. Although the relationship between a usual source of dental care and dental utilization is complex, analyses of factors relating to utilization to assess simultaneity bias by comparing models of all participants, people with a USC in the past year, and those with a source in the past 2 years found a fairly robust relationship between USC and utilization among Hispanics from San Antonio (odds ratios from 10.2-12.3; (43)). Among children in this sample with a past year dental visit, 72% had a regular source of dental care and 28% did not. It is surprising that many caregivers did not feel these children had a USC. Nearly all children without a USC went in for an exam and/or cleaning recently; only six children had a toothache or problem. Additionally, several children (34%) with a reported USC had not been to a dentist within the last year. Future studies should explore this further.

Most children in this study had dental coverage through Medicaid. However, somewhat surprisingly, the child's dental insurance status was not a key correlate in this analysis as it often is for utilization (27). This may be because of the paucity of dentists willing to accept Medicaid and see children in their practices. There were very few local dentists, not all necessarily accepted young children or had staff able to speak Spanish, and the closest pediatric dentist was about 50 miles away. For the families with a usual dentist or dental clinic for their child, most (90%) were nearby in Mendota or Fresno. Thus, many children

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appeared to have local dental homes. Firebaugh/Mendota is designated as a dental health professional shortage area (DHPSA) in California, according to the Office of Statewide Health Planning and Development. The Health Resources and Services Administration applies this designation when there is a 1:5000 dentist-to-population ratio or worse. While this DHSPA designation helps raise awareness of the lack of providers, and offers various programs for these areas and incentives like loan repayment to entice providers to serve there, but it is not enough. This community, and other underserved areas, would benefit from policy changes that enhance the incentives offered through these programs.

Even if there were more dentists in this area, more of them would also need to participate in the Medicaid program. California is one of the bottom ten states where children on Medicaid are least likely to have a past year dental visit, based on estimates indicating 59% did not have a visit in 2011 (44). Further, recent policy changes in California affect Medicaid and Healthy Families (the state's Children's Health Insurance Program). Children in the Healthy Families program are transitioning to Medicaid in phases during 2013, according to California Assembly Bill (AB) 1494. This means that more lower income children in California will need to seek care from Medicaid dentists. There will be a growing demand for dental care from the small network of Medicaid dental providers in the state. The state's reimbursements for services under Medicaid are low, and would likely need to be raised to attract more providers to the program.

One strategy to establish a dental home for every child may be to encourage everyone in the family to find a regular source of dental care. A regular source of care was an important positive correlate of utilization for adults in this study sample (45). Another recent study in a diverse Medicaid sample found that if Hispanic mothers had a regular source of care, their children were subsequently more likely to also utilize dental services (46). Other studies with lower income families have found similar positive effects on young children's dental utilization when caregivers get regular preventive dental care as well (47). National data also support this positive association between caregiver and child dental utilization (48). In this study, caregivers with past year dental visits had children who were almost twice as likely to have been to the dentist. Enabling caregivers to maintain regular dental care has a positive impact on child dental utilization. However, the state of California cut optional adult dental benefits on Denti-Cal (Medicaid) and the California Children's Dental Disease Prevention Program (CCDDPP) in 2009 (49), thus eliminating coverage for many adult caregivers and preventive services for children. Addressing caregivers' dental needs will be important for improving children's oral health status in this sample as well; mothers' untreated caries was positively associated with untreated caries in their children (50). Several costs and negative consequences associated with Medicaid adult dental benefit cuts have been documented (51). California plans to allocate funds in the next two years for select adult dental benefits under Medicaid. It will be critical to monitor the impact of these cuts on both adults and children, and in DHPSA communities in particular where there are fewer providers and access is already a challenge. Child's birth country also emerged as an important correlate of utilization. Children not born in the U.S. were far less likely to seek care. Other studies have also documented relatively lower medical and dental utilization among non-US born children (6, 20). Families may encounter significant language barriers, as many in this study were Spanish-speaking. Culturally competent providers or staff members may also be

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lacking; this means more than being able to speak the language. Providers may not understand the cultural values and beliefs that influence decisions to seek care.

Male children were less likely to have a past year dental visit than females in this sample. It is not clear why there was a gender difference. While not a statistically significant difference, more Mexican-American females (ages 2-17) had a past year dental visit than males (58% vs. 49%) based on 1999-2002 NHANES data (52).

Another factor to consider is the caregiver's perception of their child's need. This potential determinant of utilization may be more important for younger children that may not be as able to tell a parent when a tooth hurts. Nearly one-third of caregivers did not know whether or not their child had cavities. In one study of Latino families with preschool aged children, many caregivers believed that teeth only needed cleaning instead of treatment if they appeared stained (53). The large proportion of caregivers that did not know if the child had cavities suggests a need for more education about identifying the early signs of decay. While caregiver perceptions may not be totally accurate, it is noteworthy that 37% of caregivers thought their child had cavities. This perception was associated with a lower likelihood of a past year visit, suggesting some possible reverse causation; i.e. caregivers may know children are cavity-free because of a recent dental visit in which previously existing cavities were treated. Simply thinking the child has cavities does not in and of itself stop someone from visiting the dentist, but many parents do not think that baby teeth are important and do not visit the dentist unless a child complains of pain (53). However, in a high caries-risk population, not visiting the dentist leads to a higher chance of disease, and decreases opportunities for both caries prevention and remineralization of early lesions. Causality can not be determined in this study given its cross-sectional nature, but these caregiver perceived needs reinforce the other key finding of many unmet dental needs in this sample.

The results must be interpreted with study strengths and limitations in mind. The strengths of this analysis were the inclusion of clinical information about the child, a clinically-based treatment urgency measure of need, and caregiver-reported data from a large population-based sample of children in agricultural worker families. A full age range of 0-17 year old children was included. The limitations are that survey data are subject to recall and social desirability response biases, and as already noted, no causal relationships could be determined, and a having a USC is inter-related with having a recent visit.

The dentist-determined treatment urgency ratings indicated that the majority of children needed to see a dentist soon. Visiting a dentist within the next two weeks was recommended for 33% of the children, and another 37% were recommended to go at their earliest convenience. While this rating may be subjective, the assessments were all performed by one trained dentist and reflect a need for professional care sooner rather than later for most children.

CONCLUSION

In this population of Hispanic 0-17 year olds in agricultural worker families, many predisposing, enabling and need factors were associated with past year dental utilization.

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The strongest modifiable correlates were a regular source of dental care for the child and the caregivers' past year dental utilization. Emphasis needs to be placed on these two factors to improve children's dental utilization.

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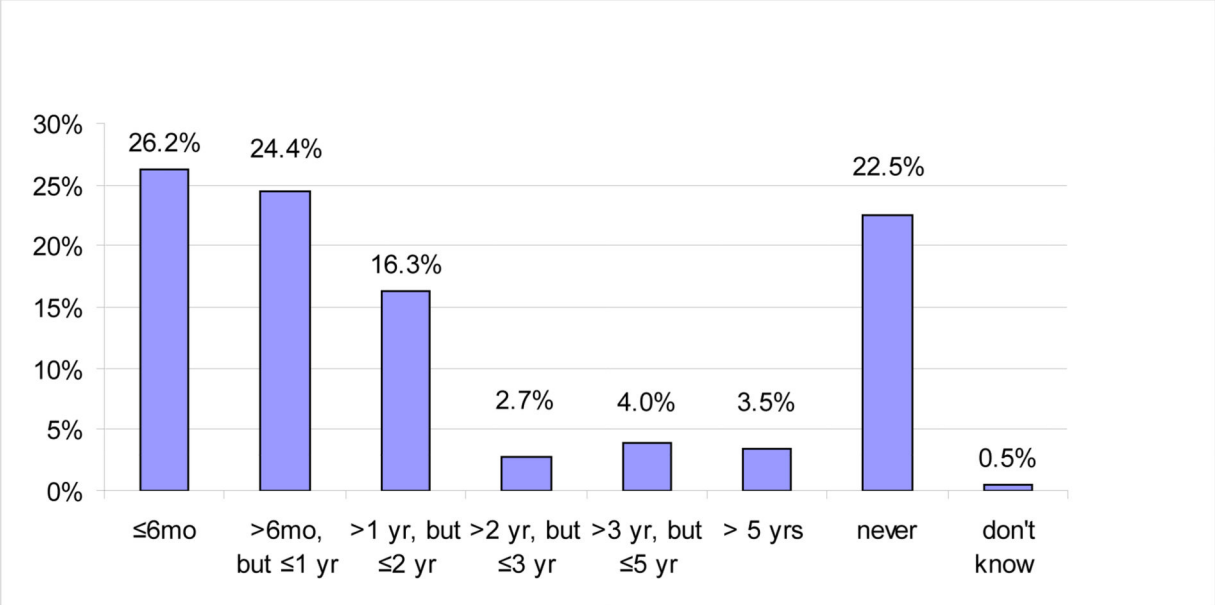

Figure 1.
Time since child's last dental visit (n=405)

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Table 1

Distribution of Predisposing, Enabling, and Need factors

VARIABLE	n=405						Dental visit last year n=205						No dental visit last year n=200						t-test or chi-sq p-value
	N	%	mean	sd	min	max	N	%	mean	sd	min	max	N	%	mean	sd	min	max	
Predisposing factors																			
CHILD LEVEL																			
Child's age			9.0	4.6	0	17			9.0	4.1	2	17			8.6	5.0	0	17	0.005
age 0-5	128	31.6					51	24.9					77	38.5					0.002
age 6-12	179	44.2					107	52.2					72	36.0					
age 13-17	98	24.2					47	22.9					51	25.5					
Male	210	51.8					99	48.3					111	55.5					0.147
Non-US born	105	25.9					27	13.2					78	39.0					<0.001
CAREGIVER LEVEL																			
Days worked farming			111.0	83.0	0	250			109.2	84.0	0	250			112.4	83.0	0	250	0.903
Enabling factors																			
CHILD LEVEL																			
Child's dental insurance																			0.003
No dental insurance	55	13.6					19	9.3					36	18.0					
Medicaid	288	71.1					161	78.5					127	63.5					
Private/other/SCHIP	62	15.3					25	12.2					37	18.5					
Usual source of dental care	215	53.1					147	71.7					68	34.0					<0.001
Free Lunch program	312	77.0					171	83.4					141	70.5					0.002
CAREGIVER LEVEL																			
caregiver past year dental visit	153	37.8					94	45.9					59	29.5					<0.001
Education (yrs)			6.4	3.8	0	22			6.7	4.0	0	22			6	3.5	0	15	0.049
Acculturation (ARSMA-II)			−3.4	1.0	−4	0.5			−3.3	1.2	−4	0.5			−3.6	0.8	−4	0.17	<0.001
Family Income																			0.520
$10,000 or less	147	30.6					72	35.2					75	37.5					
$10,001-$20,000	163	40.2					79	38.5					84	42.0					
$20,001 or more	95	23.5					54	26.3					41	20.5					
Approx. Household size			5.6	1.8	2	12			5.6	1.8	3	12			5.6	1.8	2	12	0.917

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VARIABLE	n=405						Dental visit last year n=205						No dental visit last year n=200						t-test or chi-sq p-value
	N	%	mean	sd	min	max	N	%	mean	sd	min	max	N	%	mean	sd	min	max	
Need factors																			
Treatment Urgency																			
Urgent - next 2 wks	132	32.6					62	30.2					70	35.0					0.3073
Earliest convenience	151	37.3					60	28.3					91	45.5					0.0007
Continue routine	122	30.1					83	40.5					39	19.5					
Parent thinks child has cavities now																			0.0005
No	129	31.8					82	40.0					47	23.5					
Yes	151	37.3					61	29.8					90	45.0					
Don't Know	125	30.9					62	30.2					63	31.5					
Fair/poor oral health	107	26.4					54	26.3					53	26.5					0.9711

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TABLE 2

Logistic regression results of past year dental visit (n=405)

	MODEL 1: Predisposing				MODEL 2: Predisposing & Enabling				MODEL 3: Predisposing, Enabling & Need			
	Estimate	**Confidence Limits**		**p-value**	**Estimate**	**Confidence Limits**		**p-value**	**Estimate**	**Confidence Limits**		**p-value**
Child age 6-12	3.61	2.23	5.82	<0.0001	2.31	1.33	4.00	0.0029	2.45	1.37	4.37	0.0024
Child age 13-17	3.25	1.66	6.35	0.0006	1.87	0.86	4.06	0.1159	2.32	0.95	5.64	0.0633
Male child	0.64	0.43	0.97	0.0345	0.59	0.38	0.93	0.0225	0.55	0.34	0.89	0.0145
Child non-US born	0.15	0.09	0.28	<0.0001	0.26	0.13	0.53	0.0002	0.21	0.09	0.45	<0.0001
Days caregiver worked	1.00	1.00	1.00	0.5596	1.00	1.00	1.00	0.5853	1.00	1.00	1.00	0.5907
Child no dental ins.					0.76	0.33	1.72	0.5046	0.90	0.38	2.13	0.8054
Child other dental ins.					1.01	0.49	2.07	0.9708	1.32	0.59	2.96	0.4952
Child usual source of dental care					4.17	2.34	7.46	<0.0001	4.78	2.51	9.07	<0.0001
Free Lunch program					1.24	0.62	2.48	0.5389	1.17	0.55	2.52	0.6807
Caregiver past dental visit					2.03	1.15	3.58	0.0151	1.87	1.03	3.38	0.0375
Caregiver education (yrs)					1.03	0.96	1.11	0.4128	1.02	0.95	1.11	0.5560
Caregiver acculturation					1.20	0.95	1.52	0.1260	1.17	0.91	1.51	0.2234
Income $10,001-$20,000					0.95	0.52	1.76	0.8795	0.85	0.44	1.64	0.6310
Income $20,001 +					1.25	0.62	2.53	0.5336	0.94	0.43	2.07	0.8781
Household size					0.96	0.84	1.09	0.5125	0.97	0.85	1.11	0.6823
Think child has cavities									0.31	0.16	0.61	0.0007
Don't know if has cavities									0.40	0.20	0.79	0.0083
Urgent treatment needed									0.56	0.29	1.06	0.0766
At earliest convenience									0.43	0.23	0.80	0.0084
Child oral health fair/poor									1.50	0.74	3.05	0.2618

Reference groups: age 0-5, female, US born, Medicaid, no regular source of dental care, No free/reduced lunch program, <$10,000 annual income, no cavities, no urgent dental needs, child has good or better oral health status Continuous variables: days worked in farming last year, ARSMA-II acculturation scores, household size.